

ABSTRACT

A semiconductor element including a first base layer of a first conductivity type; a second base layer of a second conductivity type formed selectively in one surface region of the first base layer; an emitter layer or a source layer of the first conductivity type formed selectively in a surface region of the second base layer; and a gate electrode formed on that portion of the second base layer which is positioned between the emitter layer or source layer and the first base layer with a gate insulating film interposed between the gate electrode and the second base layer. A channel region is formed in contact with the gate insulating film to permit a carrier to migrate between the emitter layer or source layer and the first base layer. The channel region has an impurity concentration profile such that the impurity concentration is substantially constant along the gate insulating film and in the direction in which the emitter layer or source layer, the second base layer, and the first base layer are formed.